

Effect of rumen manipulation on the laboratory digestion coefficient of barley straw

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ABSTRACT:

This experiment was conducted to study the effect of altering the rumen environment by making combinations of rumen fluids taken from ruminants (sheep and buffalo) to improve the digestion coefficient of dry matter and organic matter for barley straw. The rumen fluid obtained from sheep was mixed with rumen fluid obtained from buffalo and combinations were made in the following percentages: 0:100, 25:75, 50:50, 75:25 and 100:0 (sheep:buffalo) respectively, to estimate their effect (*in vitro*) on digestion coefficient for dry matter (IVDMD) and organic matter (IVOMD) for barley straw. The results showed a significant superiority ($P<0.01$) at the combination of 25:75 (sheep:buffalo) in laboratory digestion coefficient for dry matter (46.06%) and organic matter (48.56%) for barley straw on the other manipulation ratios 50: 50, 25: 75 and 0:100 (sheep:buffalo) and compared to 100% rumen from sheep (30.43 and 36.45%) respectively. The improvement percentage in IVDMD and IVOMD was 6.37 and 7.05%, respectively. The results also showed a significant decrease ($P<0.01$) in IVDMD and IVOMD of barley straw at 50:50 proportion (sheep: buffalo) compared to 100% rumen of sheep and 100% rumen of buffalo. The results showed a significant superiority ($P<0.01$) in IVDMD and IVOMD for barley straw when using 100% rumen fluid obtained from sheep compared to 100% rumen liquid taken from buffalo.

Keywords:

Manipulation, Rumen environment, Combinations, Barley straw.